

REMARKS

Claims 28-39 are objected to because of the following informalities:

In claim 28, lines 3-4, "ann insulatinglayer" should be "an insulating layer".

In claim 28, lines 11-12, "ccoating fillingup" should be "coating filling up".

In claim 32, last line, "dualdamascene" should be "dual damascene".

In claim 39, lines 1-2, "organic materials comprises dyes" should be "organic materials comprise dyes". Appropriate correction is required.

Claims 1, 3, 6, 15, 17, 20, 28, 30, 33 and 36-38 are rejected under 35 U.S.C. 102(b) as being anticipated by Nagahara (US 2002/0192945, dated 12/19/02).

Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Harada et al. (US 6,251,774, dated 6/26/01).

Claims 1 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Ma (US 2003/0216036, dated 11/20/03, filed 6/5/03).

Claims 1 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Chang (US 2003/0166345, dated 9/4/03, filed 3/2/02).

Claims 2, 4-5, 7-14, 16, 18-19, 21-27, 29, 31-32, 34-35 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagahara (US 2002/0192945, dated 12/19/02).

1. Response to the objection of claims 28-39 because of the informalities:

Applicant has corrected all errors in claims and appreciates the comments. Reconsideration of claims 28, 32 and 39 is politely requested.

2. Response to the rejection of claims 1, 3, 6, 15, 17, 20, 28, 30, 33 and 36-38 under 35 U.S.C. 102(b):

The examiner stated that the antireflective coating 2 and the photo resist film 1 in Fig. 2B of Nagahara are respectively equivalent to the light blocking layer and the gap filling layer, which is an anti-reflective coating, of the present application. However, the antireflective coating 2 and the photo resist film 1 of Nagahara are obviously not the same as the light blocking layer and the gap filling layer of the present application, and Nagahara never teaches or suggests forming a light blocking layer before forming a gap filling layer (anti-reflective coating), or the light blocking layer and a hard mask layer forming a composite layer. Therefore, Nagahara fails to disclose the composite layer, which is capable of being utilized as a mask for aligning a photo mask, and fails to provide a method of utilizing two direct alignments to form dual damascene structures.

The present application emphasizes utilizing the composite layer or the bottom anti-reflective coating, which are opaque with respect to alignment light beams, to prevent the alignment light beams from reaching an alignment mark in a first alignment process, and emphasizes utilizing a via pattern as a new alignment mark in a second alignment process to achieve two direct alignments for improving alignment accuracy.

In light of these differences, claims 1, 15 and 28 are not anticipated by Nagahara (US 2002/0192945, dated 12/19/02). As claims 3, 6, 17, 20, 30, 33 and 36-38 are dependent upon claims 1, 15 and 28, they should be allowable if claims 1, 15 and 28 are allowed. Reconsideration of claims 1, 3, 6, 15, 17, 20, 28, 30, 33 and 36-38 is therefore politely requested.

3.Response to the rejection of claims 1 and 3 under 35 U.S.C. 102(b):

The examiner stated that the photoresist film 48 of Harada is equivalent to the light blocking layer of the present application. However, the photoresist film 48 of Harada is an organic layer (column 9, line 7). The photoresist film 48 of Harada is different from the light blocking layer of the present application, which is a metal liner layer. Therefore, Harada fails to teach that a light blocking layer and a hard mask layer form a composite layer as recited in claim 1 of the present application, and Harada does not anticipate claim 1 of the present application.

As claim 3 is dependent upon claim 1, it should be allowable if claim 1 is allowed. Reconsideration of claims 1 and 3 is therefore politely requested.

4.Response to the rejection of claims 1 and 15 under 35 U.S.C. 102(e):

The present application emphasizes that a light blocking layer and a hard mask layer form a composite layer, which is capable of being utilized as a mask for aligning a photo mask, and a method of utilizing two direct alignments to form dual damascene structures. Ma fails to teach each of these. Furthermore, claims 13 and 26 of the present application emphasize the thickness of the titanium nitride layer (light blocking layer) is approximately 250 angstroms (Å). The thickness when the titanium nitride layer is combined with a hard mask is approximately 500 angstroms (Å), and sufficiently achieves the objective of the present application. Ma also fails to teach these limitations.

In conclusion, claims 1 and 15 are not anticipated by Ma (US 2003/0216036, dated 11/20/03, filed 6/5/03). Reconsideration of claims

1 and 15 is therefore politely requested.

5. Response to the rejection of claims 1 and 15 under 35 U.S.C. 102(e):

Claims 1 and 15 of the present application emphasize utilizing the composite layer (the hard mask and the light blocking layer) as a mask to align a photo mask to achieve the objective of the present application of improving alignment accuracy with two direct alignments. Chang fails to teach and suggest these limitations.

In conclusion, claims 1 and 15 are therefore not anticipated by Chang (US 2003/0166345, dated 9/4/03, filed 3/2/02). Reconsideration of claims 1 and 15 is therefore politely requested.

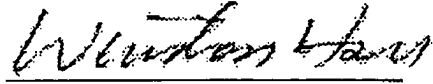
6. Response to the rejection of claims 2, 4-5, 7-14, 16, 18-19, 21-27, 29, 31-32, 34-35 and 39 under 35 U.S.C. 103(a):

According to the MPEP Sec. 2143.03, which is repeated as follows:

"If an independent claim is non-obvious under 35 U.S.C.103, then any claim depending therefrom is non-obvious. (In re Fine, 837 F.2d 1071, 5 USPQ (CCPA 1988))"

Claims 2, 4-5, 7-14, 16, 18-19, 21-27, 29, 31-32, 34-35 and 39 are dependent on claims 1, 15 and the amended claim 28, and should be allowed if claims 1, 15 and the amended 28 are non-obvious. Reconsideration of the rejection of claims 2, 4-5, 7-14, 16, 18-19, 21-27, 29, 31-32, 34-35 and 39 is therefore respectfully requested.

Sincerely yours,



Date: November 19, 2004

Winston Hsu, Patent Agent No. 41,526

P.O. BOX 506, Merrifield, VA 22116, U.S.A.

Voice Mail: 302-729-1562

Facsimile: 806-498-6673

e-mail : winstonhsu@naipo.com

(Please contact me by voice mail if you need a telephone communication.)